

Work Order ID **126178**

**\*126178\***

Page 1

Thursday, October 30, 2014 7:45:24 AM

Item ID: D407-667-105

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: *MCS*

Date: *14/10/30* Tooling:

Date:

Run Start **\*NR1\***

QC:

Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan  
Code Accept Qty Reject Qty Reject Number Insp. Stamp

Draw Nbr

Revision Nbr

D407-667-145

Rev C (DEO)

DSI9565

A

DSI9628

A

100

Document Control

0.00

**\*100\***

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels as per PPP D407-667-105 CHG005

110

0.00

**\*110\***

Packaging

Packaging

Memo

0.00

Packaging

DAS  
**46**  
9-89

DEC 22 2014

*(ix)*

*BC*

*14/11/17*

DQA:

Date: 15/03/19

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: Shervi Date:

Work Order update only ☐

|                                                                                    |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 |                                               |                                    |                                                 |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|------------------------------------|-------------------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: <u>126178</u><br>Part No. <u>D407667-105</u><br>NCR No. <u>15-4604</u> | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input checked="" type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><table> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input checked="" type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input checked="" type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>              | Crosstube <input checked="" type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input checked="" type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                                                 | Crosstube <input checked="" type="checkbox"/>                                                                                                                                             | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Engineering <input checked="" type="checkbox"/> |                                               |                                    |                                                 |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                                                 | Small Fab <input type="checkbox"/>                                                                                                                                                        | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Quality <input type="checkbox"/>                |                                               |                                    |                                                 |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                                             | Finishing <input type="checkbox"/>                                                                                                                                                        | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Other <input type="checkbox"/>                  |                                               |                                    |                                                 |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                                                 | Composite <input type="checkbox"/>                                                                                                                                                        | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                 |                                               |                                    |                                                 |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause                                  | Date     | Step | Qty | Description of work order update or non-conformance                | Initial Chief Eng                 | Action Description                              | Sign & Date                       | Verification                    | QC Inspector   |
|---------------------------------------------|----------|------|-----|--------------------------------------------------------------------|-----------------------------------|-------------------------------------------------|-----------------------------------|---------------------------------|----------------|
| Design                                      | 14/11/18 | 120  | 1   | One width under tolerance after bending<br><br>RL Bendin / Process | DAS<br>12<br>8-89<br><br>14/11/18 | Acceptable.<br><br>Overall span is in tolerance | DAS<br>12<br>8-89<br><br>14/11/18 | D.S.<br>8-89<br><br>NOV 19 2014 | S<br>15/01/12. |
| Doc/Data                                    |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Equip/Tooling                               |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Handling/Pre                                |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Material                                    |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Operator                                    |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Offset/Setup                                |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Process <input checked="" type="checkbox"/> |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Supplier                                    |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Training                                    |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Transport                                   |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |
| Unapproved                                  |          |      |     |                                                                    |                                   |                                                 |                                   |                                 |                |

## FAULT CATEGORY

| Landing Gear                                      | General                                                    |
|---------------------------------------------------|------------------------------------------------------------|
| <input checked="" type="checkbox"/> Bending       | <input type="checkbox"/> Bend                              |
| <input type="checkbox"/> Centre Not Concentric    | <input type="checkbox"/> BOM/Route                         |
| <input type="checkbox"/> Cracks                   | <input type="checkbox"/> Broken/Damage/Defect              |
| <input type="checkbox"/> Crimp/Kink/Ripple/Wave   | <input type="checkbox"/> Burrs                             |
| <input type="checkbox"/> Cuffs                    | <input type="checkbox"/> Contamination                     |
| <input type="checkbox"/> Crushing                 | <input type="checkbox"/> Countersink                       |
| <input type="checkbox"/> Heat Treat               | <input type="checkbox"/> Cut Too Short                     |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Drawing                           |
| <input type="checkbox"/> Marks/Chatter            | <input type="checkbox"/> Drill Holes                       |
| <input type="checkbox"/> Turning Sequence         | <input type="checkbox"/> Finish                            |
| <input type="checkbox"/> Wave/Twist in Tube       | <input type="checkbox"/> Fit/Function                      |
|                                                   | <input type="checkbox"/> Folio/Program                     |
|                                                   | <input type="checkbox"/> Grain                             |
|                                                   | <input type="checkbox"/> Hardware                          |
|                                                   | <input type="checkbox"/> Inspection Incomplete/Unqualified |
|                                                   | <input type="checkbox"/> Instructions Incomplete/Unclear   |
|                                                   | <input type="checkbox"/> Misaligned/off center             |
|                                                   | <input type="checkbox"/> Mislabeled                        |
|                                                   | <input type="checkbox"/> Misread                           |
|                                                   | <input type="checkbox"/> Off-set                           |
|                                                   | <input type="checkbox"/> Out of Calibration                |
|                                                   | <input type="checkbox"/> Out of Sequence                   |
|                                                   | <input type="checkbox"/> Outside Dimensions                |
|                                                   | <input checked="" type="checkbox"/> Over/Under tolerance   |
|                                                   | <input type="checkbox"/> Part Incorrect                    |
|                                                   | <input type="checkbox"/> Part Lost/Missing                 |
|                                                   | <input type="checkbox"/> Part Moved                        |
|                                                   | <input type="checkbox"/> Positioned Wrong                  |
|                                                   | <input type="checkbox"/> Power Loss/Surge                  |
|                                                   | <input type="checkbox"/> Pressure/Forced                   |
|                                                   | <input type="checkbox"/> Set-up                            |
|                                                   | <input type="checkbox"/> Temperature/Cure                  |
|                                                   | <input type="checkbox"/> Weld                              |
|                                                   | <input type="checkbox"/> Wrong Stock Pulled                |
|                                                   | <input type="checkbox"/> Other                             |

**Work Order ID 126178**

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 2

Item ID: D407-667-105

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

0.00

**\*120\***

CNC Bend 2

BENDING MACHINE - CROSSTUBES

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D407-667-145 using CNC bender program 407-fw

TSC 14/11/17

130

0.00

**\*130\***

QC

QC15- Crosstube Dimensional Check

Memo

0.00

Quality Control

DAS  
33  
989

NOV 19 2014

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence* | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Work Order ID 126178****\*126178\***

Page 3

Item ID: D407-667-105

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Run Start **\*NR1\***

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop **\*NR2\***

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

0.00

**\*140\***

Crosstubes

0.00

Crosstubes

Memo

\*\*\*\*\* ENSURE PROPER JIG POSITIONING BEFORE DRILLING\*\*\*\*\*  
VERIFIED BY: [Signature] \*\*\*\*\*

1- Drill holes &amp; ream using drill Jig DT8541 &amp; DT8542 as per Dwg D407-667-145. Drill all (3) top holes. Holes facing inboard.

\*\*\*\*\* ENSURE PROPER JIG POSITIONING BEFORE DRILLING\*\*\*\*\*  
VERIFIED BY: [Signature] \*\*\*\*\*2- Drill Fwd rivet holes using drill Jig DT8787 fwd as per Dwg D407-667-145.  
Note: Fwd side has 3x top holes. Facing inboard.

3- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint.

4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2 top holes ONLY plug most bottom holes to prevent accidental drilling.

\*\*\*\*\* ENSURE PROPER JIG POSITIONING BEFORE DRILLING\*\*\*\*\*  
VERIFIED BY: [Signature] \*\*\*\*\*

5- Drill holes and ream using drill Jig DT8541 &amp; DT8542 as per Dwg D407-667-145. Drill only the top (2) holes.

\*\*\*\*\* ENSURE PROPER JIG POSITIONING BEFORE DRILLING\*\*\*\*\*  
VERIFIED BY: [Signature] \*\*\*\*\*[Signature]

14/11/19

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
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| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

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|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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**Work Order ID 126178**

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 4

Item ID: D407-667-105

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

6- Drill Aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-145.

7- C'sink holes as per Dwg D407-667-145. Allow rivet to sit below surface to compensate for paint.

8- Scribe part # and batch # using vibrating stylus as per Dwg D407-667-145  
Inside of Cuff (Do not engrave on outside of tube)9- \*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\* Deburr  
& Inspect for surface damage. Repair damage within limits as per Dwg D407-  
667-145*TH* 14-11-28

150

QC5- Inspect part completeness to step on W/O

0.00

**\*150\***

QC

Memo

0.00

Quality Control

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

*1/φ*

160

0.00

**\*160\***

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

1-CLEAN CROSSTUBE WITH WASH'N WIPE

DAS  
38  
9-89DAS  
49  
9-8914/11/28  
DAS  
41  
9-89  
14-12-1

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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# Work Order ID 126178

\*126178\*

Page 5

Thursday, October 30, 2014 7:45:24 AM

Item ID: D407-667-105

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Run Start \*NR1\*

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop \*NR2\*

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

180

Outsource process - NDT per QSI038 4.1

0.00

\*180\*

Outsource2

Memo

0.00

Outsource process - NDT

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

OUTSIDE SERVICE -CROSSTUBES

Liquid Penetrant Inspection as per QSI 038 Or

Issue P/O: 26669 LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

CL 14/12/01 @

1X 8014-12-2

190

Packaging

0.00

\*190\*

Packaging

Memo

0.00

Packaging

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

Inspect for transit damage

Ensure copy of NDT results attached to work order.

200

QC5- Inspect part completeness to step on W/O

0.00

\*200\*

QC

Memo

0.00

Quality Control

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

Inspect for damage & ensure results are as per Dwg D206-667-145

DAS  
38  
9-89

DEC 02 2014

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Work Order ID 126178

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 6

Item ID: D407-667-105

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Run Start **\*NR1\***

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop **\*NR2\***

QC:

Date:

SPC (Y/N):

Date:

| Sequence ID/<br>Work Center ID | Operation<br>Description                                                                | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|-----------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 204                            |                                                                                         | 0.00                 |         |        |              |               |               |                  |                |
| <b>*204*</b>                   |                                                                                         |                      |         |        |              |               |               |                  |                |
| HandFXtube                     | Memo                                                                                    | 0.00                 |         |        |              |               |               |                  |                |
| Hand Finishing Crosstubes      | *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***                                        |                      |         |        |              |               |               |                  |                |
|                                | 1- PRESSURE WASH AND THEN USE WASH'N WIPE TO CLEAN CROSSTUBE BEFORE CHEMICAL CONVERSION |                      |         |        |              |               |               |                  |                |
| 206                            | QC7-Inspect Chemical Conversion Coat                                                    | 0.00                 |         |        |              |               |               |                  |                |
| <b>*206*</b>                   |                                                                                         |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                                                                    | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                | *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***                                        |                      |         |        |              |               |               |                  |                |

BL

10/12/01

)

RB

14-12-02

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Work Order ID 126178

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 7

Item ID: D407-667-105

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Run Start **\*NR1\***

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop **\*NR2\***

QC:

Date:

SPC (Y/N):

Date:

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

210

0.00

**\*210\***

SprayPaint

SprayPaint

Memo

0.00

Spray Painting

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

\*\*\*MASK AREA RPIOR TO PAINTING AS PER DWG AND DEO\*\*\*

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME BATCH: M 129850

Start Time: 10:00

Fininsh Time: 11:00

PAINT BATCH: M 130858

Start Time: 4:00

Finish Time: 8:00

220

QC14- Inspect Spray Paint

0.00

**\*220\***

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

DPO →

DQA:

Date: 15/03/19

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

Date: 15/3/16

Work Order update only ☐

|                                                                                     |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                               |                                              |                                |                                    |                                    |                                   |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|-----------------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: <u>126178</u><br>Part No. <u>D407-667-105</u><br>NCR No. <u>15-4603</u> | <b>DISPOSITION</b><br>Rework <input checked="" type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><table> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input checked="" type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input checked="" type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                                                  | Crosstube <input type="checkbox"/>                                                                                                                                                        | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                               |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                                                  | Small Fab <input type="checkbox"/>                                                                                                                                                        | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                               |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                                              | Finishing <input checked="" type="checkbox"/>                                                                                                                                             | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                               |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                                                  | Composite <input type="checkbox"/>                                                                                                                                                        | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                               |                                              |                                |                                    |                                    |                                   |  |

| Root Cause                                   | Date     | Step | Qty | Description of work order update or non-conformance                                                                    | Initial Chief Eng       | Action Description                                      | Sign & Date                | Verification               | QC Inspector  |
|----------------------------------------------|----------|------|-----|------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------|----------------------------|----------------------------|---------------|
| Design                                       | 14-12-14 | 210  | ①   | found at inspection that the crosstube had <del>also for runs</del> a lot of runs on it<br><br>RC. not OPERATOR ERROR. | S<br>Q22042<br>15/01/12 | Scuff runs and entire tube and re-paint<br><br>B#130858 | DAS 41<br>9-89<br>14-12-14 | DAS 38<br>9-89<br>14-12-19 | S<br>15/01/12 |
| Doc/Data                                     |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Equip/Tooling                                |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Handling/Pre                                 |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Material                                     |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Operator <input checked="" type="checkbox"/> |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Offset/Setup                                 |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Process <input checked="" type="checkbox"/>  |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Supplier                                     |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Training                                     |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Transport                                    |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |
| Unapproved                                   |          |      |     |                                                                                                                        |                         |                                                         |                            |                            |               |

## FAULT CATEGORY

| Landing Gear                                      | General                                                    |
|---------------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> Bending                  | <input type="checkbox"/> Bend                              |
| <input type="checkbox"/> Centre Not Concentric    | <input type="checkbox"/> BOM/Route                         |
| <input type="checkbox"/> Cracks                   | <input type="checkbox"/> Broken/Damage/Defect              |
| <input type="checkbox"/> Crimp/Kink/Ripple/Wave   | <input type="checkbox"/> Burrs                             |
| <input type="checkbox"/> Cuffs                    | <input type="checkbox"/> Contamination                     |
| <input type="checkbox"/> Crushing                 | <input type="checkbox"/> Countersink                       |
| <input type="checkbox"/> Heat Treat               | <input type="checkbox"/> Cut Too Short                     |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Drawing                           |
| <input type="checkbox"/> Marks/Chatter            | <input type="checkbox"/> Drill Holes                       |
| <input type="checkbox"/> Turning Sequence         | <input checked="" type="checkbox"/> Finish                 |
| <input type="checkbox"/> Wave/Twist in Tube       | <input type="checkbox"/> Fit/Function                      |
|                                                   | <input type="checkbox"/> Folio/Program                     |
|                                                   | <input type="checkbox"/> Grain                             |
|                                                   | <input type="checkbox"/> Hardware                          |
|                                                   | <input type="checkbox"/> Inspection Incomplete/Unqualified |
|                                                   | <input type="checkbox"/> Instructions Incomplete/Unclear   |
|                                                   | <input type="checkbox"/> Misaligned/off center             |
|                                                   | <input type="checkbox"/> Mislabeled                        |
|                                                   | <input type="checkbox"/> Misread                           |
|                                                   | <input type="checkbox"/> Off-set                           |
|                                                   | <input type="checkbox"/> Out of Calibration                |
|                                                   | <input type="checkbox"/> Out of Sequence                   |
|                                                   | <input type="checkbox"/> Outside Dimensions                |
|                                                   | <input type="checkbox"/> Over/Under tolerance              |
|                                                   | <input type="checkbox"/> Part Incorrect                    |
|                                                   | <input type="checkbox"/> Part Lost/Missing                 |
|                                                   | <input type="checkbox"/> Part Moved                        |
|                                                   | <input type="checkbox"/> Positioned Wrong                  |
|                                                   | <input type="checkbox"/> Power Loss/Surge                  |
|                                                   | <input type="checkbox"/> Pressure/Forced                   |
|                                                   | <input type="checkbox"/> Set-up                            |
|                                                   | <input type="checkbox"/> Temperature/Cure                  |
|                                                   | <input type="checkbox"/> Weld                              |
|                                                   | <input type="checkbox"/> Wrong Stock Pulled                |
|                                                   | <input type="checkbox"/> Other                             |

**Work Order ID 126178**

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 8

Item ID: D407-667-105

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

230

0.00

**\*230\***

Crosstubes

Crosstubes

Memo

0.00

DAS

41

9-89

14-12-9

INSTALL GROUNDING CLAMP AND SEAL WITH SIKAFLEX AS PER  
DWG AND DEO  
A/R SIKAFLEX BATCH: 130880

exp 8/15

1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper,  
clean the area with MEK or equivalent as per dwg

2-Install supports with Proseal 890 per D407-667-145 (DEO) and QSI 015

A/R Proseal 890 Batch: 130090EXP: 1/15

3-Install supports clamps Using Dt9565 as per Dwg D407-667-145  
(DEO), Torque to 80-100 IN-LBS.

PROSEAL CURE TIME 72 HOURS:

Start: 14-12-9Finish: 14-12-12

4-Install nut plates as per Dwg D407-667-145. Touch-up rivet heads with Imron  
paint.

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Crosstube <input type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Work Order ID 126178

**\*126178\***

Page 9

Thursday, October 30, 2014 7:45:24 AM

Item ID: D407-667-105

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Run Start **\*NR1\***

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop **\*NR2\***

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00

**\*240\***

QC

Memo

0.00

Quality Control

\*\*\*RE-CHECK TORQUE ON CLAMP AFTER PROSEAL HAS CURED  
FOR 72HOURS AS PER DWG.\*\*\*

\*\*\*VERIFY RESISTANCE AS PER NOTE 18 AND DWG DEO\*\*\*

74-12-19

250

Pick Kit

0.00

**\*250\***

Packaging

Memo

0.00

Packaging

DAS  
06  
9-89

DEC 20 2014

260

QC4- 100% Inspect kits for completeness

0.00

**\*260\***

QC

Memo

0.00

Quality Control

IX

DAS  
46  
9-89

DEC 22 2014

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Work Order ID 126178

Thursday, October 30, 2014 7:45:24 AM

**\*126178\***

Page 10

Item ID: D407-667-105

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 10/30/2014 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan Accept Reject Reject Insp.  
Code Qty Qty Number Stamp

270

0.00

**\*270\***

Packaging

0.00

Packaging

Memo

Identify and pack for shipping as per PPP D407-667-105

Location: 097

PPP Rev: \_\_\_\_\_

DAS  
06  
9-89

DAS  
13  
DEC 30/2014  
89

280

QC21- Final Inspection - Work Order Release

0.00

**\*280\***

QC

Memo

0.00

Quality Control

MLJ 1501-05

*Handwritten signature/initials*

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Picklist Print

Thursday, October 30, 2014 7:45:31 AM

Page 1

Work Order ID: 126178

\*126178\*

Parent Item: D407-667-105

\*D407-667-105\*

Parent Item Name: Fwd Crosstube - High 407

Start Date: 10/30/2014

Required Date: 10/30/2014

Start Qty: 1.00

Required Qty: 1.00

## Comments:

IPP Rev:F 05.09.01 Add holes for compatibility with Bell SkidtubesKJ/JLM  
 IPP Rev:G 08-05-16 chg QC6 to QC15 DD verified by:EC  
 IPP Rev:H 08-06-03 update as per DSI9415 (ECN1198) DD verified by:ec  
 IPP Rev:I 08-07-14 add (scribe inside of tube) seq.6 DD verified by:EC  
 IPP Rev:J 08-07-28 update as per (par 08-013) DD verified by:EC  
 IPP Rev K 09.01.06 ECN 08-562 EC verified by:DD IPP REV:L  
 11.08.05 PER ECN 11-615 DD VERF:EC IPP REV:M 12.08.20  
 DSI9628 revA (ECN12-631) DD VERF:JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

D206-667-017

Manufactured

No

Each

10.0000

1

DAS

41

9-89

14-12-10

\*D206-667-017\*

Ground Strap Installation

Location

127122

Loc Qty

Loc Code

FG

2

102581

2

LG050

7

107968

5

97504

2

LG054

1

125463

1

AN5-10A\*

Purchased

No

250

Each

217.0000

10

10

DEC 20 2014

DAS

06

9-89

\*AN5-10A\*

BOLT

DAS

46

9-89

Location

Loc Qty

Loc Code

GA

101

122800

101

Return2014

10

123528

10

ST338

94

M130466

94

st503

12

M126180

12

mf

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

**FAULT CATEGORY**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |
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# Picklist Print

Thursday, October 30, 2014 7:45:31 AM

Page 2

Work Order ID: 126178

Parent Item: D407-667-105

Parent Item Name: Fwd Crosstube - High 407

\*126178\*

\*D407-667-105\*

Start Date: 10/30/2014

Required Date: 10/30/2014

Start Qty: 1.00

Required Qty: 1.00

AN5-30A

Purchased

No

250

Each

207.0000

4 4

**\*AN5-30A\***  
BOLT

DAS  
46  
9-89

Location

Loc Qty

Loc Code

ST336

207

126105

4

M127363

150

M128403

45

M128561

8

\*\*

DAS  
06  
9-89

AN5-32A

Purchased

No

250

Each

443.0000

4 4

**\*AN5-32A\***  
Bolt

DAS  
46  
9-89

Location

Loc Qty

Loc Code

ST336

443

124215

80

m127363

4

m128403

66

m128634

93

m130716

200

\*\*

DAS  
06  
9-89

MS21042L5

Purchased

No

250

Each

952.0000

4 4

**\*MS21042L5\***  
Nut

DAS  
46  
9-89

Location

Loc Qty

Loc Code

ST305

952

125684

8

m127304

1

m127813

489

m128810

7

m129472

6

m130358

441

\*\*

DEC 20 2014

Thursday, October 30, 2014 7:45:31 AM

Shop Packet Print

Page 2

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Picklist Print

Thursday, October 30, 2014 7:45:31 AM

Work Order ID: 126178

Parent Item: D407-667-105

Parent Item Name: Fwd Crosstube - High 407

**\*126178\***

**\*D407-667-105\***

Start Date: 10/30/2014

Required Date: 10/30/2014

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0563J

Purchased

No

250

Each

1,377.000

18 18

\*\*

**\*NAS1149D0563.1\***

Washer

DAS  
46  
9-89

DEC 20 2014

DAS  
66  
9-89

Location

Loc Qty

Loc Code

GA

124

m125807

124

ST269

1253

m126319

98

m128257

1155

110

Each

2.0000

1

1

\*\*

D407-667-105TRN

Manufactured

No

**\*D407-667-105TRN\***

Crosstube Turning Detail

Location

Loc Qty

Loc Code

LG014

2

116476

1

120869

1

230

Each

20.0000

2

2

\*\*

D2873-043

Manufactured

No

**\*D2873-043\***

Nut Plate Assembly

Location

Loc Qty

Loc Code

LG052

20

107964

4

113050

8

114550

8

230

Each

23.0000

2

2

\*\*

D2873-045

Manufactured

No

**\*D2873-045\***

Nut Plate Assembly

Location

Loc Qty

Loc Code

LG052

23

113886

23

2

Thursday, October 30, 2014 7:45:31 AM

Shop Packet Print

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause                             | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|----------------------------------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design <input type="checkbox"/>        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data <input type="checkbox"/>      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling <input type="checkbox"/> |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre <input type="checkbox"/>  |      |      |     |                                                     |                   |                    |             |              |              |
| Material <input type="checkbox"/>      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator <input type="checkbox"/>      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup <input type="checkbox"/>  |      |      |     |                                                     |                   |                    |             |              |              |
| Process <input type="checkbox"/>       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier <input type="checkbox"/>      |      |      |     |                                                     |                   |                    |             |              |              |
| Training <input type="checkbox"/>      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport <input type="checkbox"/>     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved <input type="checkbox"/>    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Picklist Print

Thursday, October 30, 2014 7:45:31 AM

Page 4

Work Order ID: 126178

Parent Item: D407-667-105

Parent Item Name: Fwd Crosstube - High 407

**\*126178\***

**\*D407-667-105\***

Start Date: 10/30/2014

Required Date: 10/30/2014

Start Qty: 1.00

Required Qty: 1.00

D2891-1

Manufactured No

230

Each

24.0000

2

2

DAS

**\*D2891-1\***

\*\*

41

9-89

14-12-9

Support 2.25

Location

Loc Qty

Loc Code

FG

2

84164

2

LG014

12

113044

1

114948

11

2

LG052

10

120972

10

D3595-063-395

Manufactured No

230

Each

193.0000

4

4

DAS

**\*D3595-063-395\***

\*\*

41

9-89

14-12-9

Rubber Cushion

Location

Loc Qty

Loc Code

FG

5

87353

5

LG051

188

110958

6

115027

100

4

115737

82

MS21920-20

Purchased No

Each

203.0000

4

DAS

**\*MS21920-20\***

\*\*

41

9-89

14-12-9

Clamp

Location

Loc Qty

Loc Code

FG

2

122254

2

LG050

201

m126266

1

m127225

4

m128429

1

m128650

195

4

Thursday, October 30, 2014 7:45:31 AM

Shop Packet Print

Page 4

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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# Picklist Print

Thursday, October 30, 2014 7:45:31 AM

Page 5

Work Order ID: 126178

Parent Item: D407-667-105

Parent Item Name: Fwd Crosstube - High 407

\*126178\*

\*D407-667-105\*

Start Date: 10/30/2014

Required Date: 10/30/2014

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W10

Purchased

No

230

Each

435.0000

14

14

\*MS20601-AD4W10\*

\*\*

PR 14-12-02

RIVET

Location

Loc Qty

Loc Code

LG050

432

M127301

30

M127578

2

M128594

100

M128701

300

LG051

3

M128718

3

Thursday, October 30, 2014 7:45:31 AM

Shop Packet Print

Page 5

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

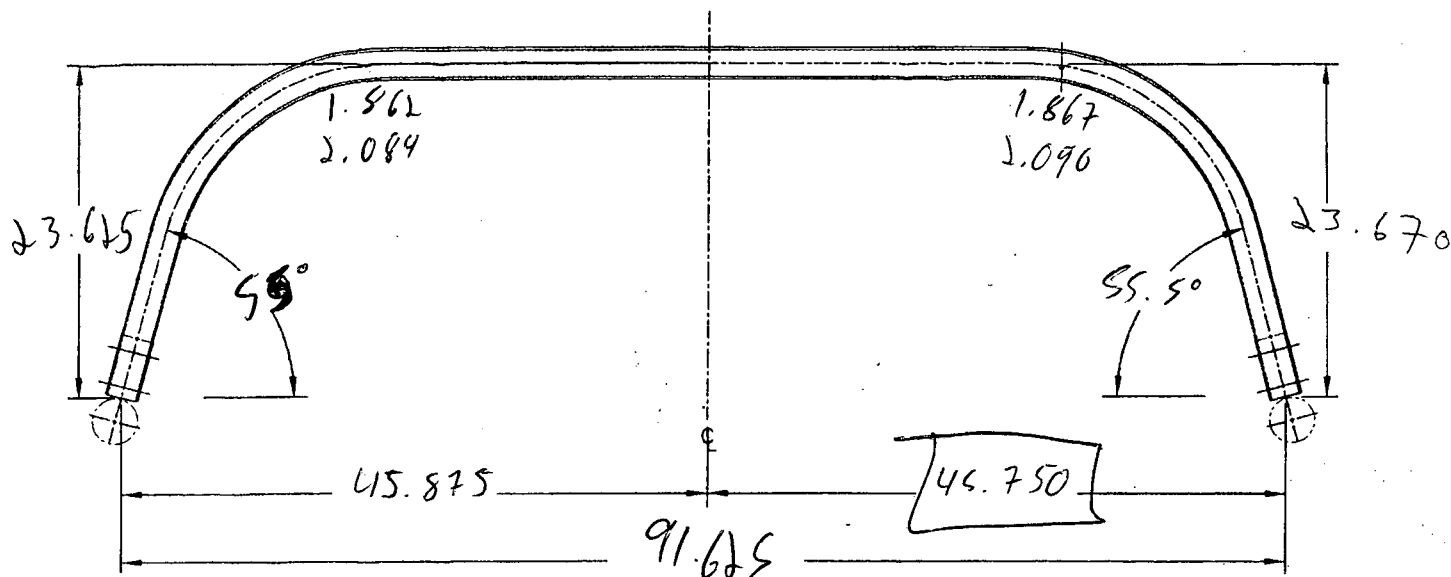
| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
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| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
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|                                                   |  |                     |              |
|---------------------------------------------------|--|---------------------|--------------|
| <b>DART AEROSPACE LTD</b>                         |  | <b>Work Order:</b>  | 126178       |
| <b>Description:</b> Crosstube High Fwd (407)      |  | <b>Part Number:</b> | D407-667-105 |
| <b>Inspection Dwg:</b> D407-667-145 <b>Rev:</b> C |  | <b>Page 1 of 1</b>  |              |

| Required Dimension | Min   | Max   |
|--------------------|-------|-------|
| Height             | 23.41 | 23.67 |
| 1/2 Span           | 45.81 | 46.07 |
| Angle              | 54    | 56    |
| Total Span         | 91.62 | 92.14 |
| Bending Passes     | 6     | --    |
| Crushing           | --    | 6%    |



|                       | Side A | Side B |
|-----------------------|--------|--------|
| <b>Bending Passes</b> | 16     | 16     |
| <b>Crushing</b>       | 5.6%   | 5.6%   |
| <b>Comments</b>       |        |        |
| DAS                   |        |        |
| 38                    |        |        |
| 9-89                  |        |        |
| 14-11-17              |        |        |

|                 |  |      |
|-----------------|--|------|
| QC15 Inspection |  | DAS  |
| Date            |  | 38   |
|                 |  | 9-89 |

| Rev | Date     | Change                                  | Revised by | Approved |
|-----|----------|-----------------------------------------|------------|----------|
| A   | 07.02.06 | New Issue                               | KJ/JM      |          |
| B   | 09.11.12 | Dimensions updated per Dwg Rev C        | KJ         |          |
| C   | 12.04.16 | Added bending, crushing dimensions      | KJ         |          |
| D   | 12.10.30 | Revised Total Span dimensions & Dwg Rev | KJ         |          |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

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| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
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| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Item | Qty<br>-145 | Part Number    | Description                                                                                                    |
|------|-------------|----------------|----------------------------------------------------------------------------------------------------------------|
| 1    | X           | D407-667-145   | CROSSTUBE ASSEMBLY (407 HIGH FWD)                                                                              |
| 2    | 1           | D6010-115      | CROSSTUBE                                                                                                      |
| 3    | 2           | D2873-043      | NUT PLATE                                                                                                      |
| 4    | 2           | D2873-045      | NUT PLATE                                                                                                      |
| 5    | 2           | D2891-1        | SUPPORT                                                                                                        |
| 6    | 4           | D3595-063-395  | RUBBER CUSHION                                                                                                 |
| 7    | 4           | MS21920-20     | CLAMP (OR MS21920-21)                                                                                          |
| 8    | 14          | MS20601AD4W 10 | RIVET (OR NAS9302B-4-10)                                                                                       |
| 9    | A/R         | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023<br>ADHESIVE (TEXTRON/BELL SPEC. 299-<br>947-100, TYPE II, CLASS 2 ADHESIVE) |

# **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6010-115  
FINISHED LENGTH = 113.20±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON  
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,  
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE  
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER  
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE  
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS  
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN  
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 126178 MLS  
14-10-30

DEO ATTACHED

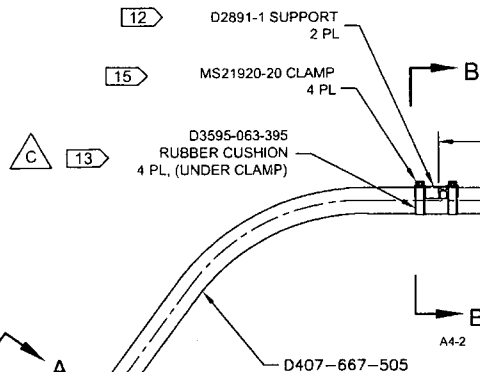
ECW #11-615  
11.07.26

UNDER REVIEW

RELEASED  
08/11/12

|            |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                 |              |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| C          | REVISE GENERAL NOTES/PART LIST (ZN D7-1);<br>REORGANIZED VIEWS AND REFORMATTED DRAWING<br>TO CURRENT STANDARDS.<br>D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2);<br>REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3,<br>D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210;<br>MOVED TURNING DETAIL & UPDATED TOLERANCE TO<br>SHEET 4. | RF                                                                                                                                                                                                                                                                              | 08.11.06     |
| B          | ADD HOLES AND NUT PLATES FOR COMPATABILITY<br>WITH BHT/AA SKUDTUBES                                                                                                                                                                                                                                                                 | PH                                                                                                                                                                                                                                                                              | 05.07.26     |
| A          | NEW ISSUE                                                                                                                                                                                                                                                                                                                           | CP                                                                                                                                                                                                                                                                              | 02.05.08     |
| REV.       | DESCRIPTION                                                                                                                                                                                                                                                                                                                         | BY                                                                                                                                                                                                                                                                              | DATE         |
| DESIGN     | RF                                                                                                                                                                                                                                                                                                                                  | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                               |              |
| DRAWN      | RF                                                                                                                                                                                                                                                                                                                                  | DRAWING NO.                                                                                                                                                                                                                                                                     | REV. C       |
| CHECKED    | RF                                                                                                                                                                                                                                                                                                                                  | D407-667-145                                                                                                                                                                                                                                                                    | SHEET 1 OF 4 |
| MFG. APPR. | RF                                                                                                                                                                                                                                                                                                                                  | TITLE                                                                                                                                                                                                                                                                           | SCALE        |
| APPROVED   | RF                                                                                                                                                                                                                                                                                                                                  | CROSSTUBE ASSY (407 HIGH FWD)                                                                                                                                                                                                                                                   | NTS          |
| DE APPR.   | RF                                                                                                                                                                                                                                                                                                                                  | COPYRIGHT © 2002 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |
| DATE       | 08.11.06                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                 |              |

8 7 6 5 4 3 2 1



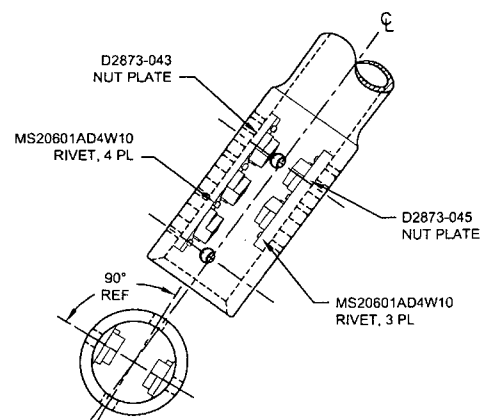
ECN #11.615  
11.07.26

UNDER REVIEW

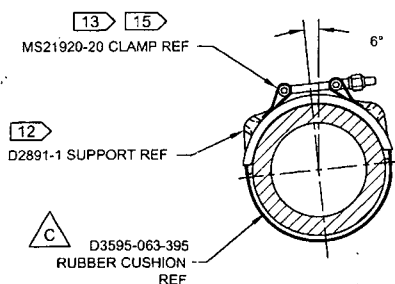
RELEASE  
08/11/13

DEO ATTACHED

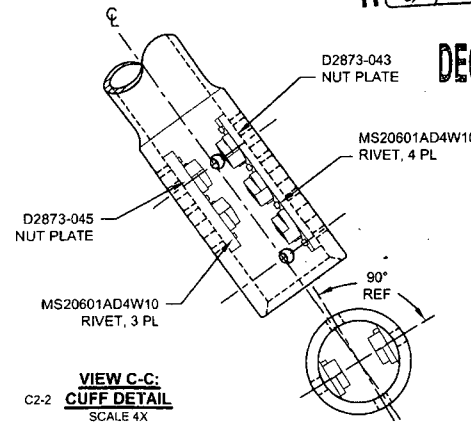
**D407-667-145  
ASSEMBLY DETAIL  
(VIEW LOOKING FWD)**



**VIEW A-A:  
CUFF DETAIL  
SCALE 4X**



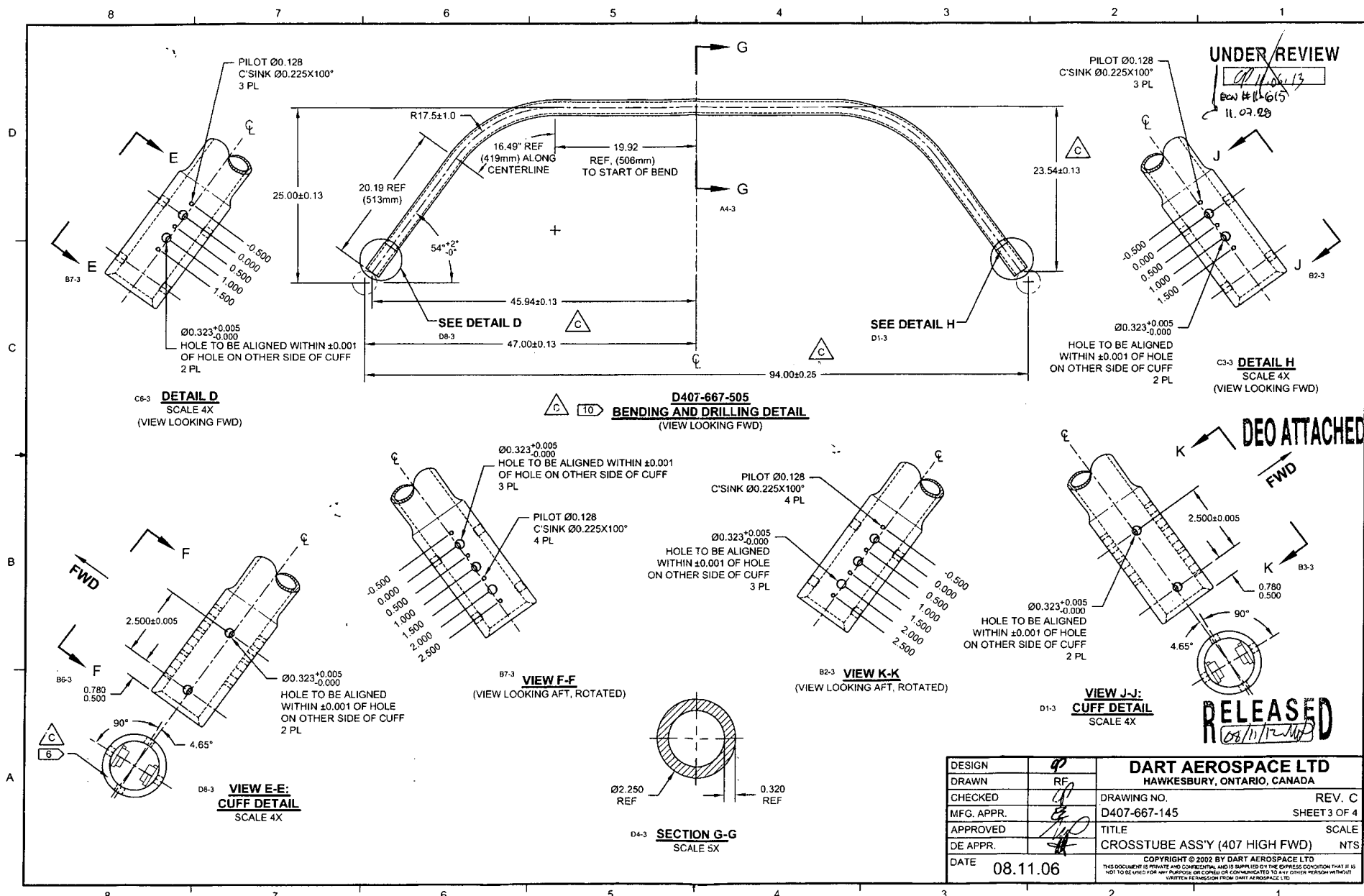
**SECTION B-B  
SCALE 5X**



**VIEW C-C:  
CUFF DETAIL  
SCALE 4X**

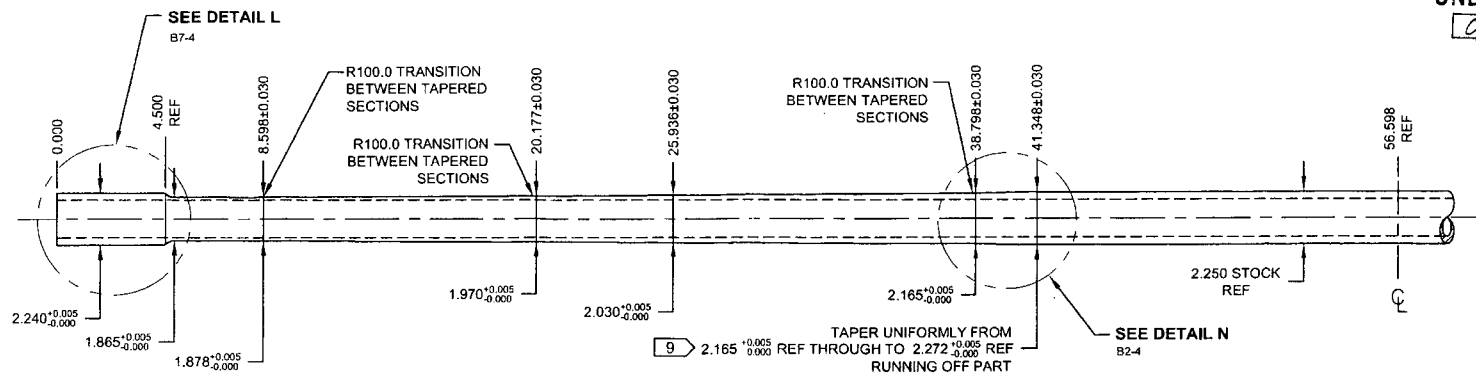
|            |          |                                                                                                                                                                                                                                                                                          |              |
|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 9P       | <b>DART AEROSPACE LTD</b>                                                                                                                                                                                                                                                                |              |
| DRAWN      | RF       | HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                                                              |              |
| CHECKED    | JP       | DRAWING NO.                                                                                                                                                                                                                                                                              | REV. C       |
| MFG. APPR. | JP       | D407-667-145                                                                                                                                                                                                                                                                             | SHEET 2 OF 4 |
| APPROVED   | JP       | TITLE                                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   | JP       | CROSSTUBE ASS'Y (407 HIGH FWD)                                                                                                                                                                                                                                                           | NTS          |
| DATE       | 08.11.06 | <small>COPYRIGHT © 2002 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |              |

8 7 6 5 4 3 2 1

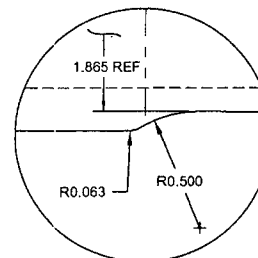


UNDER REVIEW

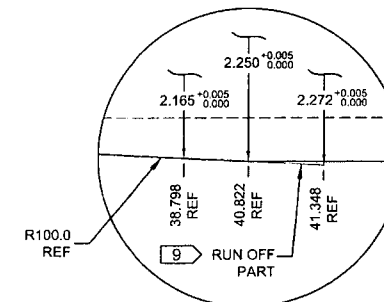
08/11/06  
BOW #11.615  
11.07.26



**TURNING DETAIL**



**DETAIL M:**  
CUFF TRANSITION  
NOT TO SCALE

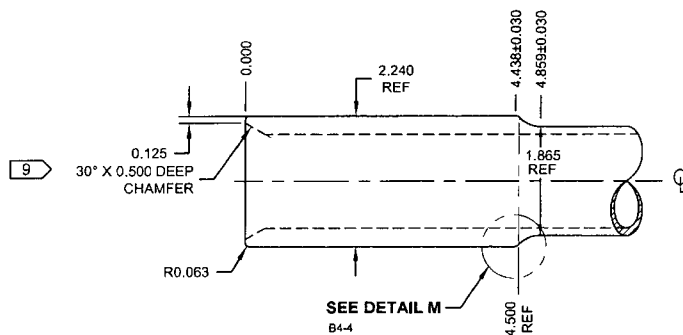


**DETAIL N:**  
TAPER RUN-OFF  
NOT TO SCALE

DEO ATTACHED

RELEASED  
08/11/06

**DETAIL L:**  
CROSSTUBE CUFF  
NOT TO SCALE



|            |          |                                                                                                                                                                                                                                 |              |
|------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 08/11/06 | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                        |              |
| DRAWN      | RF       | DRAWING NO.                                                                                                                                                                                                                     | REV. C       |
| CHECKED    | 08/11/06 | D407-667-145                                                                                                                                                                                                                    | SHEET 4 OF 4 |
| MFG. APPR. | 08/11/06 | TITLE                                                                                                                                                                                                                           | SCALE        |
| APPROVED   | 08/11/06 | CROSSTUBE ASS'Y (407 HIGH FWD)                                                                                                                                                                                                  | NTS          |
| DE APPR.   | 08/11/06 | COPYRIGHT © 2002 BY DART AEROSPACE LTD                                                                                                                                                                                          |              |
| DATE       | 08.11.06 | THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR CONDUCT OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |

|                             |                                         |                         |                                                 |  |                                |                           |              |
|-----------------------------|-----------------------------------------|-------------------------|-------------------------------------------------|--|--------------------------------|---------------------------|--------------|
| DRAWING NO.<br>D407-667-145 | TITLE<br>CROSSTUBE ASS'Y (407 HIGH FWD) | REV. C                  | <b>DART AEROSPACE LTD<br/>ENGINEERING ORDER</b> |  | D.E.O. NO.<br>D407-667-145-C-1 | SHEET NO.<br>SHEET 1 OF 1 | SCALE<br>NTS |
| DRAWN<br><i>q</i>           | CHECKED<br><i>ASS</i>                   | MFG. APPR.<br><i>18</i> | APPROVED<br><i>WD</i>                           |  | DE APPR.<br><i>#</i>           |                           |              |
| DATE<br>11.07.15            | DATE<br>11.07.22                        | DATE<br>11.07.22        | DATE<br>11/07/22                                |  | DATE<br>11.07.21               |                           |              |

**PURPOSE:**

REPLACE MAGNOBOND WITH PROSEAL.

**CHANGE:**

IS:

| Item | Qty<br>-145 | Part Number     | Description                   |
|------|-------------|-----------------|-------------------------------|
| 9    | A/R         | PROSEAL 890 B-2 | SEALANT, AMS-S-8802 CLASS B-2 |

WAS:

|   |     |                |                                                                                                               |
|---|-----|----------------|---------------------------------------------------------------------------------------------------------------|
| 9 | A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023<br>ADHESIVE (TEXTRON/BELL SPEC. 299-947-100,<br>TYPE II, CLASS 2 ADHESIVE) |
|---|-----|----------------|---------------------------------------------------------------------------------------------------------------|

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRAD MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

**RELEASED**  
2011-07-28  
*WD*

|                             |                                         |                     |                                                 |                                |                           |              |
|-----------------------------|-----------------------------------------|---------------------|-------------------------------------------------|--------------------------------|---------------------------|--------------|
| DRAWING NO.<br>D407-667-145 | TITLE<br>CROSSTUBE ASS'Y (407 HIGH FWD) | REV. C              | <b>DART AEROSPACE LTD<br/>ENGINEERING ORDER</b> | D.E.O. NO.<br>D407-667-145-C-2 | SHEET NO.<br>SHEET 1 OF 1 | SCALE<br>NTS |
| DRAWN<br>AJS                | CHECKED                                 | MFG. APPR. <i>E</i> | APPROVED <i>AD</i>                              | DE APPR. <i>AD</i>             |                           |              |
| DATE<br>12.08.02            | DATE<br>12.08.02                        | DATE<br>12.08.02    | DATE<br>12.08.02                                | DATE<br>12.08.02               |                           |              |

**PURPOSE:**

ADD ELECTRICAL GROUNDING STRAP

**CHANGE:**

| ITEM | QTY<br>-145 | PART NUMBER   | DESCRIPTION                       |
|------|-------------|---------------|-----------------------------------|
| 1    | X           | D407-667-145  | CROSSTUBE ASSEMBLY (407 HIGH FWD) |
| 10   | 2           | AN742D36      | CLAMP                             |
| 11   | 2           | MS9165-05     | ANGLE BRACKET                     |
| 12   | 2           | MS21042L3     | NUT (OR MS21042-3)                |
| 13   | 2           | MS27039-1-08  | SCREW                             |
| 14   | 4           | NAS1149C0332R | WASHER (OR AN960C10L)             |

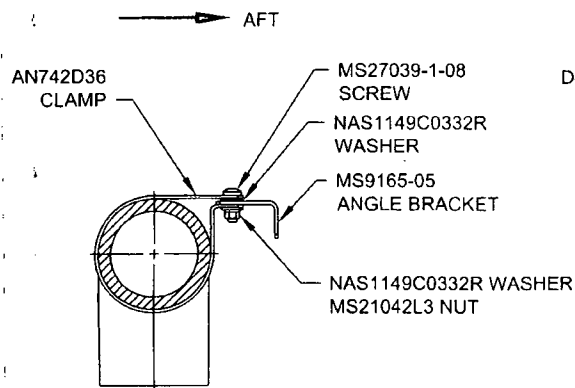
ADD

**GENERAL NOTES:**

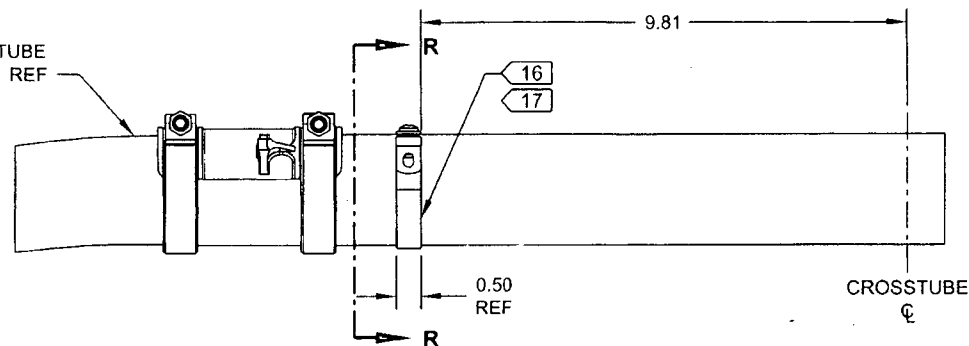
- 16) MASK AREA UNDER CLAMP PRIOR TO PAINTING
- 17) SEAL EDGES WHERE AN742D36 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 890 SEALANT
- 18) PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MILLIOHMS

ADD

**RELEASED**  
P 12.08.17  
ECN 12-631



**SECTION R-R**



**DETAIL P**  
BONDING STRAP INSTALLATION 2 PL

# DART SERVICE INSTRUCTION

TO AMEND INSTRUCTIONS FOR CONTINUOUS AIRWORTHINESS ICA-D206-667 Rev. 3 OR LATER

REF. CANADIAN STC: SH01-5

REF. FAA STC: SR01304NY

REF. EASA STC: EASA.IM.R.S.01179

## PURPOSE:

The supports on the following crosstubes are now installed using Proseal instead of Magnobond:

D206-667-101 @ CHG 004  
D206-667-103 @ CHG 005  
D206-667-107 @ CHG 002  
D206-667-201 @ CHG 004

D206-667-203 @ CHG 004  
D206-667-207 @ CHG 002  
D407-667-105 @ CHG 004

## CHANGE:

For the crosstubes listed above, section 32.4 of ICA-D206-667 is amended as follows. Use Figures 32-4 to 32-8 of ICA-D206-667 for further reference. For crosstubes of an earlier change number, it is recommended that if the supports are removed, the supports should be reinstalled using the procedure listed below.

### 32.4 SUPPORT INSTALLATION

- 32.4.1 Locate the area on crosstube for installation of support (ref. Figures 32-4 to 32-8 of ICA-D206-667). For D206-667-101/-103/-107/-201 and D407-667-105 crosstubes, the outward face of the support tabs should be 13.08" (332mm) from the crosstube center. For D206-667-203/-207 crosstubes, the outward face of the support tabs should be 10.03" (255mm) from the crosstube center. Ensure paint finish of crosstube is intact; touch up as required per Chapter 5 (5.3.9) of ICA-D206-667.
- 32.4.2 If present, remove any paint/primer on bottom of supports. Abrade mating surfaces of support and crosstube with 400-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.3 Ensure a layer of 3M Scotch-Weld 2216 B/A Epoxy Adhesive is on the bottom of the support. If required, either apply or touch-up support to have a 0.03" to 0.05" thick layer of adhesive over the entire mating surface. Allow supports to cure for 24 hours.
- 32.4.4 Abrade mating surfaces of support (after cure) and crosstube with 180-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.5 Apply a 0.04" to 0.07" thick layer of Proseal 890 Class B or AMS-S-8802 Class B sealant underneath applicable support and install support.
- 32.4.6 Install the clamps opposite to crosstube support as shown in Figures 32-4 to 32-8 of ICA-D206-667. Install rubber cushions underneath each clamp around the bottom circumference of the crosstube up to the crosstube centerline. Torque clamps 80-100 in·lb (9.0-11.3 Nm). It is acceptable to use smaller or larger sized MS21920-XX clamps than those listed in ICA-D206-667, ensure that after torquing the clamps per this instruction, the nuts are in safety but not bottomed out
- 32.4.7 Prior to installing crosstube on aircraft, allow supports to cure for 72 hours and recheck torque on clamps.

CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

APPROVED

BY:   
D. SHEPHERD (DE # 02)

DATE: 11.07.20  
CERT. NO.: SH01-5  
ISSUE NO.: 3

|            |                                                                                     |                                                                                                                                                                                                                                                                          |              |
|------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| A          | NEW ISSUE                                                                           | CP                                                                                                                                                                                                                                                                       | 11.07.15     |
| REV.       | DESCRIPTION                                                                         | BY                                                                                                                                                                                                                                                                       | DATE         |
| DESIGN     |  | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                 |              |
| DRAWN      |  |                                                                                                                                                                                                                                                                          |              |
| CHECKED    | ASS                                                                                 | DRAWING NO.                                                                                                                                                                                                                                                              | REV. A       |
| MFG. APPR. | N/A                                                                                 | DSI 9565                                                                                                                                                                                                                                                                 | SHEET 1 OF 1 |
| APPROVED   |  | TITLE                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   |  | SUPPORT INSTALLATION CHANGE                                                                                                                                                                                                                                              | NTS          |
| DATE       | 11.07.15                                                                            | COPYRIGHT © 2011 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>                                                                                                                                                 | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>                                                                                                                                                 | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>                                                                                                                                                 | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>                                                                                                                                                 | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                      |                                    |                                    |                                      |                                    |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|-----------------------------------------------------|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |                                                     |                   |                    |             |              |              |
| Doc/Data      |      |      |     |                                                     |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |                                                     |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |                                                     |                   |                    |             |              |              |
| Material      |      |      |     |                                                     |                   |                    |             |              |              |
| Operator      |      |      |     |                                                     |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |                                                     |                   |                    |             |              |              |
| Process       |      |      |     |                                                     |                   |                    |             |              |              |
| Supplier      |      |      |     |                                                     |                   |                    |             |              |              |
| Training      |      |      |     |                                                     |                   |                    |             |              |              |
| Transport     |      |      |     |                                                     |                   |                    |             |              |              |
| Unapproved    |      |      |     |                                                     |                   |                    |             |              |              |

### FAULT CATEGORY

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other                                                                                                                                                                                                                                                          |



# DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. D AND EARLIER AND  
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 3 AND EARLIER

REF: CANADIAN STC: SH01-5  
REF: FAA STC: SR01304NY  
REF: EASA STC: EASA.IM.R.S.01179

## PURPOSE:

The purpose of this service instruction is to permanently add the D206-667-017 Kit to the DXXX-667-101/-103/-105/-107 Crosstube kits.

## INSTRUCTIONS:

DXXX-667-101/-103/-105/-107 Crosstubes at CHG 005/006/005/003 (respectively) and later are supplied with the D206-667-017 Grounding Strap Kit installed per section 3.2 of IIN-D206-667 Rev. D.

## WEIGHT AND BALANCE

There is a negligible weight change associated with the installation of this kit.

CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH  
DAO # 01-O-01

APPROVED

BY:

D. SHEPHERD (DE # 02)

DATE: 12.08.02  
CERT. NO.: SH01-5  
ISSUE NO.: 3

|            |                          |                                                                                                                                                                                                                                                                                |              |
|------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| A          | NEW ISSUE (REF CIR 12-3) | AJS                                                                                                                                                                                                                                                                            | 11.08.02     |
| REV.       | DESCRIPTION              | BY                                                                                                                                                                                                                                                                             | DATE         |
| DESIGN     | AJS                      | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                       |              |
| DRAWN      | AJS                      |                                                                                                                                                                                                                                                                                |              |
| CHECKED    | B                        | DRAWING NO.                                                                                                                                                                                                                                                                    | REV. A       |
| MFG. APPR. | N/A                      | DSI 9628                                                                                                                                                                                                                                                                       | SHEET 1 OF 1 |
| APPROVED   | 149                      | TITLE                                                                                                                                                                                                                                                                          | SCALE        |
| DE APPR.   | 149                      | GROUNDING STRAP INSTALLATION                                                                                                                                                                                                                                                   | NTS          |
| DATE       | 12.08.02                 | COPYRIGHT © 2012 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |

KK Bye.

## 407-667-105 Folio

### Setup

Use 1.6" spacers under 2.25 rollers

2.935" (2.875 + one .060 shim) for SA,, 2.995 ( 2.875 + two .060 )shims for SB Spacer in buggy on large table/adjust supporting rollers as required.

19.25", **36.4" RED** from cuff, centerline is @ 56.6

### LARGE TABLE

Run programs 407f 01-07 without stopping going down the taper, **36.4" line**, approaches are Y 3200 and W 1750.CHECK

Then run programs 407f 10-16 without stopping from **19.25" line**. "CHECK" approaches are Y 3500 and W 3200 for all programs running up taper, . Programs 17 and up are to finish tube off if necessary.CHECK between each program.. **Large table**

in order to reduce the height, increase cuff angle at program 7. tubes are still finishing too high. jw 11-08-26

- update: increased power on step 9 of prog 7 by 20 points. tubes are finishing at prog 19. height fixed.

12-08-01 after program 7 on both tubes, side "B" had bent in substantially more than side "A". approximately 4" more than the first side. tubes both turned out okay, but were watched closely on

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19  
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19  
20





Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO26669

Purchase Order Date 12/1/2014

PO Print Date 12/1/2014

Page Number 2 of 3

**Order From :**

VC-SKY001

SKYSERVICE  
6120 MIDFIELD ROAD  
MISSISSAUGA, ONTARIO L5P 1B1  
CANADA

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 905-678-5636

**Ship To Contact**

**Ship To Phone**

**Ship Via:** Delivered

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms** Net 30

**Currency** CAD

**FOB** FCA - (Free Carrier)

|   |        |                           |           |      |          |         |
|---|--------|---------------------------|-----------|------|----------|---------|
| 3 | 126177 | D407-667-105<br>CROSSTUBE | 12/1/2014 | 1.00 | \$141.67 | \$141.6 |
|---|--------|---------------------------|-----------|------|----------|---------|

Yes

12/1/2014

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR  
LPI AS PER ASTM 1417 LEVEL 2

**Line Total:** \$141.6

|   |        |                           |           |      |          |         |
|---|--------|---------------------------|-----------|------|----------|---------|
| 4 | 126178 | D407-667-105<br>CROSSTUBE | 12/1/2014 | 1.00 | \$141.67 | \$141.6 |
|---|--------|---------------------------|-----------|------|----------|---------|

Yes

12/1/2014

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR  
LPI AS PER ASTM 1417 LEVEL 2

**Line Total:** \$141.6

|   |        |                           |           |      |          |         |
|---|--------|---------------------------|-----------|------|----------|---------|
| 5 | 126504 | D407-667-205<br>CROSSTUBE | 12/1/2014 | 1.00 | \$141.67 | \$141.6 |
|---|--------|---------------------------|-----------|------|----------|---------|

Yes

12/1/2014

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR  
LPI AS PER ASTM 1417 LEVEL 2

Note:

12/1/2014



# skyservice Work Order Traveler

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

|                |                               |               |                  |
|----------------|-------------------------------|---------------|------------------|
| WO #: MWO22930 | Customer: Dart Aerospace Ltd. | Dept: NDT YUL | Reference: 26669 |
| Descr:         | PN:                           | S/N:          | Qty: 1           |
| Make:          | Model:                        | Reg:          | A/C S/N:         |
| TSN:           | CSN:                          | TSO:          |                  |

|                          |             |
|--------------------------|-------------|
| Task: <b>UNSCHEDULED</b> | Sequence: 1 |
|--------------------------|-------------|

## Work Required:

CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 6 CROSSTUBES

ITEM ID: D407-667-205 AFT CROSSTUBE - HIGH 407

1 - WORK ORDER ID#: 126504

2 - WORK ORDER ID#: 126505

ITEM ID: D407-667-105 FWD CROSSTUBE - HIGH 407

3 - WORK ORDER ID#: ~~126178~~

4 - WORK ORDER ID#: 126177

8014-12-2

ITEM ID: D406-667-107 FWD CROSSTUBE - MID HEIGHT 206L / L1 / L3 / L4

5 - WORK ORDER ID#: 126176

6 - WORK ORDER ID#: 126175

| Action Taken:                                                                                                   |          |     |     |       |         | Date:       | Initial/Stamp: |
|-----------------------------------------------------------------------------------------------------------------|----------|-----|-----|-------|---------|-------------|----------------|
| LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-6) AS PER ASTM1417M-13                   |          |     |     |       |         | DEC 01 2014 | <br>f          |
| NO CRACK FOUND                                                                                                  |          |     |     |       |         |             |                |
| Pen: ZL-56 BATCH# 09H094 EXP. DATE: AUG 2014, DEV: SKD-S2 EXP. DATE: OCT2017 CLEANER: SKC-S EXP. DATE: APR 2018 |          |     |     |       |         |             |                |
| Description                                                                                                     | Location | P/N | Qty | Batch | S/N Off | S/N On      |                |
|                                                                                                                 |          |     |     |       |         |             |                |
|                                                                                                                 |          |     |     |       |         |             |                |
|                                                                                                                 |          |     |     |       |         |             |                |
|                                                                                                                 |          |     |     |       |         |             |                |
|                                                                                                                 |          |     |     |       |         |             |                |
|                                                                                                                 |          |     |     |       |         |             |                |

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

|            |  |                   |                      |
|------------|--|-------------------|----------------------|
| Signature: |  | ACA/SCA Stamp<br> | Date:<br>DEC 01 2014 |
| Name:      |  |                   |                      |

ANTONINO MARCHETTA